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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/823,775

04/14/2004

Uwe Mickan

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7590

08/08/2007

PILLSBURY WINTHROP SHAW PITTMAN, LLP

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EXAMINER

KIM, PETER B

ART UNIT

PAPER NUMBER

2851

MAIL DATE

DELIVERY MODE

08/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/823,775	MICKAN ET AL.	
	Examiner	Art Unit	
	Peter B. Kim	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,8,12-17,19-21 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,12-17,19-21 and 23-26 is/are rejected.
- 7) ☒ Claim(s) 6,8 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's arguments filed on June 14, 2007 have been fully considered.

Claim Objections

Claim 6 objected to because of the following informalities: Claim 6 is dependent on claim 2, which is now cancelled. Appropriate correction is required.

In order to expedite prosecution, claim 6 is assumed to be dependent on claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 12-14, 17, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Bristol et al. (Bristol) (2005/0074706).

Regarding claims 1, 12-14, and 19, Bristol discloses a method of fabricating a device using a lithographic process and a lithographic apparatus (para 0002) comprising an illumination system to condition a projection beam of extreme ultraviolet radiation (para 0002, 0014, 0023, Fig. 5), a support structure to support a patterning device (inherent to para 0002), a substrate table (inherent to para 0002) to hold a substrate (Fig.5) having a resist layer (10), a projection system (inherent to para 0002), and an electric field generator (16) to apply a fixed potential (para 0024) where the upper surface is at a positive potential (Fig. 5) between a layer of

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conductive material (para 0025) on the upper surface (14) and a layer on conductive material on the lower surface (12) of the resist layer (10), the direction of the field being substantially perpendicular to a plane of the resist layer during the exposing (Fig. 1, E).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bristol et al. (Bristol).

Bristol discloses the claimed invention as discussed above. However, Bristol does not disclose the thickness of the conductive material and the metallic conductive material to an upper surface of a resist layer. Regarding claim 24 and 25, although Bristol does not disclose that the metallic conductive material, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a metallic conductive material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 410.

Regarding claims 5 and 26, although Bristol does not disclose that the conductive material has a thickness less than 50 nm, it would have been obvious to one of ordinary skill in the art to provide appropriate thickness of the conductive layer since it has been held that

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discovering an optimum value of a result effective variable involves only routine skill in the art.

In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bristol et al. (Bristol) in view of Park (2003/0001493).

Bristol discloses the claimed invention as discussed above; however, Bristol does not disclose one of the conductive material which is metallic. Park discloses a metallic conductive layer (72) under that resist (74). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a metallic conductive layer to the invention of Bristol in order to form a signal wiring on the substrate, a gate line and the data line as taught by Park in para 0047-0048.

Claims 15, 16, 20, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bristol et al. (Bristol) in view of Huisman et al. (Huisman) (2006/0220126).

Regarding claims 15, 16, 20, 21, and 23, Bristol discloses the claimed invention as discussed above; however, Bristol does not disclose the resist which is conductive or a conductive material incorporated with the resist material. However, it is a common knowledge for a photoresist to incorporate a conductive material as shown in Huisman in para 0010. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a conductive resist to the invention of Huisman in order to apply the electric field without having a separate conductive layer.

Allowable Subject Matter

Claims 6, 8 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 6 and 27, none of the prior art of record teaches or discloses a method of fabricating a device using a lithographic process comprising the layer of conductive material which overlaps a side or base of the device in combination with the limitations of claim 1 or 24.

Response to Arguments

The rejection based on De Smit reference is withdrawn in response to applicant's arguments and amendments to the claims. However, the rejection based on Bristol is maintained.

Applicant argues that Bristol does not disclose conductive layer on the lower surface of the resist. However, Bristol does disclose a semiconductor substrate 12 on the lower surface of the resist.

Regarding claims 15 and 16, based on applicant's arguments, Huisman reference is combined with Bristol to reject the claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 9:00 AM - 6:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Peter B. Kim
Primary Examiner
Art Unit 2851

July 30, 2007